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[PGD 16: Fluid Power]

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वायवीय तरल शक्ति – सिलिंडर, 1 000 कि० पास्कल (10 बार) श्रृंखला – छड़ सिरा क्लेविस – आरोपण आयाम

(पहला पुनरीक्षण)

Indian Standard

PNEUMATIC FLUID POWER — CYLINDERS, 1 000 kPa (10 bar) SERIES — ROD END CLEVIS — MOUNTING DIMENSIONS

(First Revision)

ICS 23.100.20

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

November 1999

Price Group 2

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical with ISO 8140 : 1991 'Pneumatic fluid power — Cylinders, 1 000 kPa (10 bar) series — Rod end clevis — Mounting dimensions' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Pneumatic Fluid Power Systems Sectional Committee (PE 16) and approval of the Production Engineering Division Council.

This standard was first published in 1991 by adopting ISO 8140 : 1986. The ISO Standard has since been revised as ISO 8140 : 1991. In view of a number of changes observed in the revised ISO Standard, the Committee dealing with the subject decided to revise IS 13087 : 1991 by adopting the above ISO Standard as an Indian Standard.

In pneumatic fluid power systems, power is transmitted and controlled through a gas under pressure within a circuit. Pneumatic fluid power cylinder is one of the components of the above system. It converts power into linear mechanical force and motion. It consists of a movable element, that is, a piston and piston rod, operating within a cylindrical bore.

In the adopted standard, certain terminology, conventions and method of presentation are not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In the adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 286 - 2 : 1988 ISO system of limits and fits — Part 2 : Tables of standard tolerance grades and limit deviations for holes and shafts	IS 919 (Part 2) : 1993 ISO system of limits and fits : Part 2 Tables of standard tolerance grades and limit deviations for holes and shafts (*first revision*)	Technically Equivalent
ISO 5598 : 1985 Fluid power systems and components — Vocabulary	IS 10416 : 1992 Fluid power systems and components — Vocabulary (*first revision*)	Identical
ISO 6430 : 1992 Pneumatic fluid power — Single rod cylinders, with integral mountings — 1 000 kPa (10 bar) series — Bores from 32 mm to 250 mm — Mounting dimensions	IS 12738 : 1995 Pneumatic fluid power — Single rod cylinders,1 000 kPa (10 bar) series, with integral mountings, bores from 32 mm to 250 mm — Mounting dimensions (*first revision*)	do
ISO 6431 : 1992 Pneumatic fluid power — Single rod cylinders, with detachable mountings — 1 000 kPa (10 bar) series — Bores from 32 mm to 320 mm — Mounting dimensions	IS 10143 : 1995 Pneumatic fluid power — Single rod cylinders, 1 000 kPa (10 bar) series, with detachable mountings, bores from 32 mm to 320 mm — Mounting dimensions (*first revision*)	do
IS 6432 : 1985 Pneumatic fluid power — Single rod cylinders, 10 bar (1 000 kPa) series — Bores from 8 mm to 25 mm — Mounting dimensions	IS 12723 : 1988 Pneumatic fluid power — Single rod cylinders, 1 000 kPa (10 bar) series — Bores from 8 mm to 25 mm — Mounting dimensions	do

(*Continued on third cover*)

Indian Standard

PNEUMATIC FLUID POWER — CYLINDERS, 1 000 kPa (10 bar) SERIES — ROD END CLEVIS — MOUNTING DIMENSIONS

(First Revision)

1 Scope

This International Standard specifies the mounting dimensions required for interchangeability of rod end clevis of pneumatic cylinders. The rod end clevis have been designed specifically for use with 1 000 kPa [10 bar[1]] series cylinders manufactured in accordance with ISO 6430, ISO 6431 and ISO 6432 but this does not limit their application.

The clevis are used on piston rods of pneumatic cylinders for mechanically transmitting the cylinder force. The design of the clevis is based on the maximum forces resulting from the specified internal diameter of the cylinders and pressure according to ISO 6430, ISO 6431 and ISO 6432.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts.*

ISO 5598:1985, *Fluid power systems and components — Vocabulary.*

ISO 6430:—[2], *Pneumatic fluid power — Single rod cylinders with integral mountings — 1 000 kPa (10 bar) series — Bores from 32 mm to 250 mm — Mounting dimensions.*

ISO 6431:—[3], *Pneumatic fluid power — Single rod cylinders with detachable mountings — 1 000 kPa (10 bar) series — Bores from 32 mm to 320 mm — Mounting dimensions.*

ISO 6432:1985, *Pneumatic fluid power — Single rod cylinders — 10 bar (1 000 kPa) series — Bores from 8 to 25 mm — Mounting dimensions.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 5598 apply.

4 Mounting dimensions

See figure 1 and table 1.

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[1] 1 bar = 100 kPa = 10^5 Pa; 1 Pa = 1 N/m².

[2] To be published. (Revision of ISO 6430:1983)

[3] To be published. (Revision of ISO 6431:1983)

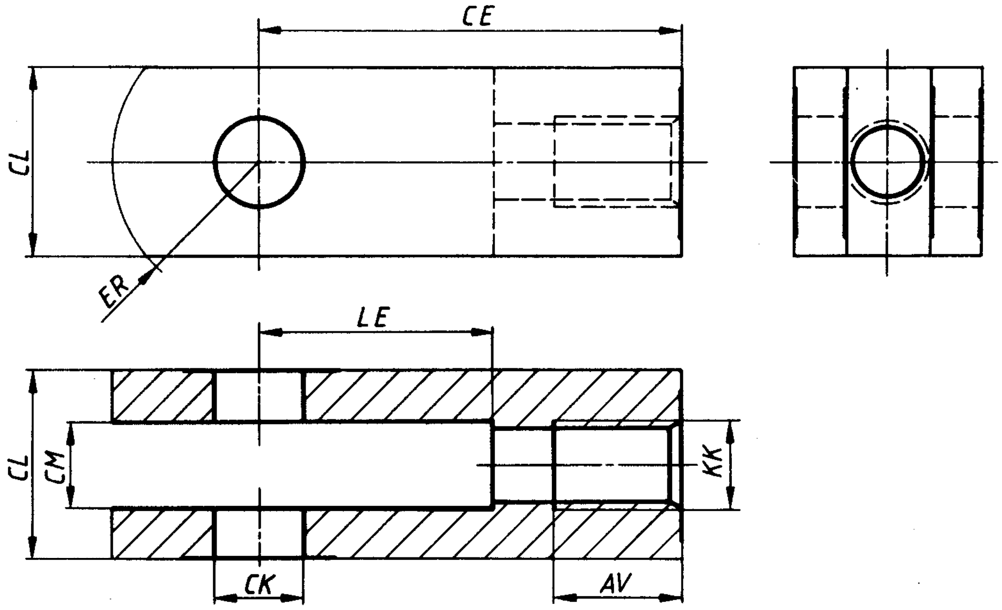

Figure 1 — Rod end clevis

Table 1 — Dimensions of rod end clevis

Dimensions in millimetres

KK	*AV* min.	*CK* H9	*CE*	*CL* max.	*CM*	*LE* min.	*ER* max.
M4 × 0,7	8	4	16	8	$4^{+0,4}_{+0,1}$	8	6,5
M6 × 1	12	6	24	12	$6^{+0,4}_{+0,1}$	12	9,5
M8 × 1,25	16	8	32	16	$8^{+0,50}_{+0,15}$	16	13
M10 × 1,25	20	10	40	20	$10^{+0,50}_{+0,15}$	20	16
M12 × 1,25	22	12	48	24	$12^{+0,50}_{+0,15}$	24	19
M16 × 1,5	28	16	64	32	$16^{+0,50}_{+0,15}$	32	25
M20 × 1,5	33	20	80	40	$20^{+0,60}_{+0,15}$	40	32
M24 × 2[1]	42	25	100	50	$25^{+0,60}_{+0,15}$	50	41
M27 × 2	51	30	110	55	$30^{+0,60}_{+0,15}$	54	45
M36 × 2	56	35	144	70	$35^{+0,60}_{+0,15}$	72	57
M42 × 2	60	40	168	85	$40^{+0,60}_{+0,15}$	84	77
M48 × 2	65	50	192	96	$50^{+0,60}_{+0,15}$	96	88

1) This thread will be progressively abandoned and shall not be considered for new designs.

5 Application instructions

5.1 Installation

5.1.1 The tolerance of f8 is recommended for the bearing shaft (see ISO 286-2).

5.1.2 The rod end clevis shall be locked with a locking nut.

5.2 Lubrication

5.2.1 Sufficient lubrication shall be provided for the satisfactory performance of the rod end clevis.

5.2.2 The method and frequency of such lubrication depends on the particular operating conditions.

6 Example of ordering designation

A rod end clevis with male thread of KK = M12 × 1,25 shall be designed as follows:

Rod end ISO 8140 - M12 × 1,25

7 Identification statement (Reference to this International Standard)

Use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard:

"Cylinder rod end clevis mounting dimensions selected in accordance with ISO 8140, *Pneumatic fluid power — Cylinders*, 1 000 kPa (10 bar) *series — Rod end clevis — Mounting dimensions*."

Annex A
(informative)

Bibliography

[1] ISO 6099:1985, *Fluid power systems and components — Cylinders — Identification code for mounting dimensions and mounting types.*

(*Continued from second cover*)

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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